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Feb

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/726,336

12/01/2003

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11.015011 CON

5486

41696 7590 07/12/2007

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EXAMINER

STOCK JR, GORDON J

ART UNIT

PAPER NUMBER

2877

MAIL DATE

DELIVERY MODE

07/12/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	Application No. 10/726,336	Applicant(s) ZAHNISER ET AL.	
	Examiner Gordon J. Stock	Art Unit 2877	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 25 May 2007.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 16-26, 28-32 and 37-43 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 16-26, 28-32, 37-40 and 43 is/are rejected.
- 7) ☒ Claim(s) 41 and 42 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some    \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### DETAILED ACTION

1. Due to applicant's persuasive arguments in regards to the previous rejections under 35 U.S.C. 103(a) of **claims 16-25, 28, 37, and 39** (see action 20070219), the previous rejection of the claims have been withdrawn. Please see Interview Summary PTOL-413 (20070525). In addition, upon further search a new line of rejection has been established. In view of the new line of rejection the **finality** of the previous action (20070219) is **withdrawn** by the Examiner..

#### *Claim Objections*

2. **Claim 40** is objected to for the following: on line 3 'more greed' should read –more green-. Correction is required
3. **Claim 42** is objected to for the following: claim 42 is improperly dependent on the LED array of claim 29. Examiner suggests having 'LED array of claim 29' read –system of claim 29-. Correction is required.
4. **Claim 43** is objected to for the following: on line 2 'closing spaced' should read –closely spaced-. Correction is required.

#### *Claim Rejections - 35 USC § 103*

5. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
6. **Claims 16-25, 28, 37, and 38** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Fujihara et al. (4,852,985)** in view of **Krasieva et al. (5,734,498)**.

As for **claim 16**, Fujihara in an illuminating device for microscopes discloses the following: a light source comprising an array of closely spaced LEDS, including a first LED having a first narrow band wavelength and a second LED having a second narrow band

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wavelength different from the first narrow band wavelength that are located side by side (Fig. 1: 1, 2; Fig. 3b: 1, 2; col. 2, lines 50-55; col. 3, lines 49-56); separately controllable (Fig. 1: 10, 12; col. 3, lines 1-5); at least one lens disposed between light source and sample (Fig. 1: 3 and 6); wherein the light source illuminates the sample using light emitted from one or both of the first and second LEDs without dichroic mixing and without the light passing through a bandwidth filter (col. 3, lines 1-5; col. 49-57). Fujihara does not explicitly state that the sample is on a slide, but he mentions a microscope with Koehler illumination (col. 2, lines 48-51). And Krasieva in an illuminator element for conventional light microscopes teaches that slides are typically used to support samples in Koehler illuminated microscope systems (col. 4, line 60). Therefore, it would be obvious to one of ordinary skill in the art at the time the invention was made to have a slide to provide support for the sample being investigated.

As for **claims 17, 18, 21, 22**, Fujihara in view of Krasieva discloses everything as above (see **claim 16**). In addition, Fujihara discloses a red LED, green LED, and another LED of a different wavelength (Fig. 3b: arrays of red, green, and blue LEDs).

As for **claims 19, 20, 25**, Fujihara in view of Krasieva discloses everything as above (see **claim 16**). In addition, Fujihara discloses an array of green LEDs and an array of red LEDs (Fig. 3b: array of red and green LEDs).

As for **claims 23-24**, Fujihara in view of Krasieva discloses everything as above (see **claim 16**). In addition, Fujihara discloses a first wavelength between about 690 and about 750 nm with the red LED (Fig. 3b: red LEDs) and the second wavelength between about 500nm and about 600nm with the green LED (Fig. 3b: green LEDs).

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As for **claim 28**, Fujihara in view of Krasieva discloses everything as above (see **claim 25**). In addition, Fujihara discloses the first and second LED arrays are formed on a single substrate (Fig. 3a: 13).

As for **claim 37**, Fujihara in an illuminating device for microscopes discloses the following: a first array of one or more LEDs having a first narrow band wavelength (Fig. 3b: a plurality of red LEDs); a second array of one or more LEDs having a second narrow band wavelength different from the first narrow band wavelength (Fig. 3b: a plurality of green LEDs); a third array of one or more LEDs having a third narrow band wavelength different from the first and second narrow band wavelengths (Fig. 3b: a plurality of blue LEDs); each of the first, second, and third LED arrays being formed on a single substrate (Fig. 3a: 13, 1, 2); at least one lens disposed between the sample and the respective first, second, and third LED arrays (Fig. 1: 3, 6); wherein, the lighting system illuminates the sample using light emitted from one or more of the first, second, and third LED arrays, without the light passing through a bandwidth filter (Fig. 1: 1-7; Fig. 3b; col. 3, lines 49-56). Fujihara does not explicitly state that the sample is on a slide, but he mentions a microscope with Koehler illumination (col. 2, lines 48-51). And Krasieva in an illuminator element for conventional light microscopes teaches that slides are typically used to support samples in Koehler illuminated microscope systems (col. 4, line 60). Therefore, it would be obvious to one of ordinary skill in the art at the time the invention was made to have a slide to provide support for the sample being investigated.

As for **claim 38**, Fujihara in view of Krasieva discloses everything as above (see **claim 16**). In addition, Fujihara discloses the optical instrument comprises a microscope (col. 2, lines 50-51); the LED array is positioned in a general position of a lamp filament of a Koehler

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illuminator (Fujihara: col. 2, lines 48-55 in evidence of Krasieva: Fig. 8); and at least one lens comprises a Koehler illuminator (Fujihara: col. 2, lines 48-60 in evidence of Krasieva: Fig. 8).

7. **Claim 26** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Fujihara et al. (4,852,985)** in view of **Krasieva et al. (5,734,498)** further in view of **Wunderman et al. (6,122,042)**—previously cited.

As for **claim 26**, Fugihara in view of Krasieva discloses everything as above (see **claim 25**). In addition, Fugihara discloses a single substrate in which the arrays are formed (Fig. 3a). He is silent concerning two substrates. However, Wunderman in an optical identification device teaches that arrays of LEDs may be on one or two substrates (Figs. 2b and 6a). Therefore, it would be obvious to one of ordinary skill in the art at the time the invention was made to have the single substrate separable into two substrates since it has been held that constructing a formerly integral structure in various elements involves only routine skill in the art. *Nerwin v. Erlichman*, 168 USPQ 177, 179.

8. **Claims 29-32** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Morgan et al. (2003/0076281)**—previously cited.

As for **claim 29**, Morgan in a diffuse illumination system discloses the following: an optical instrument lighting system, a surgical microscope (paragraph 0355) comprising a first narrow band wavelength LED consisting of a first die, a second narrow band wavelength LED consisting of a second die, the first narrowband wavelength different from the second narrowband wavelength (paragraphs 0109 with paragraph 0020); a plurality of lenses including a first lens positioned over the first die and a second lens positioned over the second die (Fig. 7: 1005); wherein the lighting system illuminates the sample using light emitted from one or both

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of the first and second LEDs (paragraph 0356 demonstrates all LEDs are used in illumination since the LED system illuminates the material) without the light passing through a bandwidth filter (only signal filtering is mentioned: paragraph 0143 and teaches away from optical filtering: paragraph 0017). As for a substrate wherein the first and second dies are attached, Morgan does not explicitly state this. However, Examiner takes Official Notice that substrates are well known in the art for providing a support for dies. In addition, Morgan suggests that a substrate exists (Fig. 107: 1001 dies are attached to a plane). Therefore, it would be obvious to one of ordinary skill in the art at the time the invention was made to provide a substrate in order to have the LED dies attached to provide support and stability to the LED system.

As for **claims 30-32**, Morgan discloses everything as above (see **claim 29**). In addition, he discloses a plurality of green LEDs, plurality of red LEDs, at least one red LED and at least one green LED (paragraph 0109).

9. **Claims 39-40** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Fujihara et al. (4,852,985)** in view of **Krasieva et al. (5,734,498)** in evidence of **Wunderman et al. (6,122,042)**—previously cited.

As for **claim 39**, Fujihara in view of Krasieva discloses everything as above (see **claim 16**). In addition, Fujihara discloses a microchip module (col. 3, lines 42-47). In addition, Wunderman in a photometric device discloses a microchip module for an LED array (Fig. 6a).

As for **claim 40**, Fujihara in view of Krasieva and in evidence of Wunderman discloses everything as above (see **claim 39**). In addition, Fujihara discloses a substrate (Fig. 3a: 13) including one or more red LEDs and one or more green LEDs attached to the substrate (Fig. 3a:

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1; Fig. 3b: 1, 2); and a plurality of lenses including a first lens positioned over at least one red LED (Fig. 1: 3) and a second lens positioned over at least one green LED (Fig. 1: 6).

10. **Claim 43** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Wunderman et al. (6,122,042)**—previously cited.

As for **claim 43**, Wunderman discloses an illumination source, an LED array (Fig. 1a: 30) comprising an LED module comprising an array of closely spaced LEDs including a first LED having a first narrow band wavelength and a second LED having a second narrow band wavelength different from the first narrow band wavelength, the first and second LEDs being separately controllable arranged side-by-side (Fig. 1a: 38; Fig. 2b: 30, 46; col. 9, lines 10-20; col. 7, lines 10-15; col. 11, lines 49-55). As for being within a 4 mm diameter, Wunderman does not explicitly state this. However, he discloses the LEDs are substantially cubic (Fig. 2E; 46) are closely spaced to each other (Fig. 2b: 46) and that each LED die has a volume of .03 cubic mm (col. 6, line 33). Therefore, it would be obvious to one of ordinary skill in the art at the time the invention was made that two LEDs fell within a 4mm diameter for each die is approximately .3 mm wide (Fig. 2b: 2 LEDs are approximately .6 mm wide).

11. **Claim 43** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Miller et al. (6,373,568)**—previously cited.

As for **claim 43**, Miller discloses an illumination source (Fig. 2: 1) comprising an LED module comprising an array of closely spaced LEDs (Fig. 2: 10a-10j); including a first LED having a first narrow band wavelength and a second LED having a second narrow band wavelength different from the first narrow band wavelength that are located side by side (Fig. 4a: 1; Fig. 2: 10a-10j; col. 4, lines 55-65; col. 5, lines 40-52); separately controllable (Fig. 3: 42 and



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43). Miller suggests that the LEDs may be about 12.7 mm from each other (col. 6, lines 28-30). He is silent concerning a diameter of 4mm. It would have been an obvious matter of design choice to have the LED module have two LEDs fall within a 4 mm diameter since such a modification would have involved a mere change in the size of a component, the LED module. A change in size is generally recognized as being within the level of ordinary skill in the art. In re Rose, 105 USPQ 237 (CCPA 1955).

***Allowable Subject Matter***

12. **Claims 41-42** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

As to **claims 41-42**, the prior art of record, taken alone or in combination, fails to disclose or render obvious in an optical instrument lighting system the first and second lenses are attached to the potting material, in combination with the rest of the limitations of **claims 41- 42**.

***Response to Arguments***

13. Applicant's arguments (Remarks filed on December 6, 2006) with respect to the claims have been considered but are moot in view of the new ground(s) of rejection

***Conclusion***

14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: U.S. Patent 5,309,277 to Deck

U.S. Patent 5,489,771 to Beach et al.

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### ***Fax/Telephone Numbers***

If the applicant wishes to send a fax dealing with either a proposed amendment or a discussion with a phone interview, then the fax should:

1) Contain either a statement "DRAFT" or "PROPOSED AMENDMENT" on the fax cover sheet; and

2) Should be unsigned by the attorney or agent.

This will ensure that it will not be entered into the case and will be forwarded to the examiner as quickly as possible.

*Papers related to the application may be submitted to Group 2800 by Fax transmission. Papers should be faxed to Group 2800 via the PTO Fax machine located in Crystal Plaza 4. The form of such papers must conform to the notice published in the Official Gazette, 1096 OG 30 (November 15, 1989). The CP4 Fax Machine number is: (571) 273-8300*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gordon J. Stock whose telephone number is (571) 272-2431.

The examiner can normally be reached on Monday-Friday, 10:00 a.m. - 6:30 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory J. Toatley, Jr., can be reached at 571-272-2800 ext 77.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private Pair system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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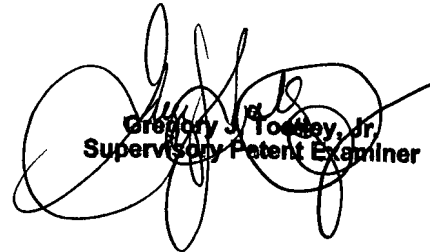
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July 8, 2007

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